REMARKS

Claims 1-2, 4-5, 7-23, and 25-35 are pending in this application, with claim 35 having been added by the above amendment. Claims 14-18, 20-23, 25, 26, and 32-34 have been allowed. Claims 1, 4, 7-10, 12, 13, 19, 27, and 28 have been rejected. Claims 2, 4, 5, 11, and 29-31 have been objected to.

Claim Objections

The Office has objected to claims 4 and 31 for the reasons detailed on page 2 of the Office Action. Applicant thanks the Office for its detailed reading of the claims. Applicant has amended claims 4 and 31 and, therefore, respectfully requests withdrawal of this objection to the claims.

Rejection – 35 U.S.C. § 102(e)

The Office has rejected claims 1, 4, 7-10, 12, 13, and 19 under 35 U.S.C. § 102(e) as being anticipated by Kim et al. (U.S. Patent No. 6,891,241) for the reasons listed on pages 2-3 of the Office Action. Applicant respectfully traverses this rejection.

The rejected claims contain one of the following two limitations. First, the claimed device comprises a MRE that contains a first conductive layer connected to terminals via leads. Or second, the claimed device comprises a MRE that changes its resistance depending on the current flowing through a nearby current-carrying component (i.e., a MOSFET). The Office has failed to show, however, that the device depicted in Figures 1-3 of Kim et al. contains either of these features.

Kim et al. describes a process for making a MRAM device. *See Abstract.* The MRAM device 10 is formed by forming a source (S) and drain (D) in substrate 20, forming a gate dielectric layer 22, and then forming a magnetic tunnel junction (MTJ) 30 containing a lower magnetic layer 32, a tunnel barrier layer 34, and an upper magnetic layer 36. *See Figures 1-2 and column 3, line 56 through column 4, line 45.* Depending on the electric field applied (by the word or bit lines above the MTJ), the magnetized direction of the upper layer 36 becomes parallel or anti-parallel to the magnetized direction of the layer 32. *See Figure 3 and column 4, lines 35-40.*

But the Office has failed to show that the device in Figures 1-3 of Kim et al. describes the first claimed limitation of an MRE containing a first conductive layer that is connected to terminals via leads. Indeed, it would be difficult for the Office to substantiate that Kim et al. teach such a limitation in light of how the device in Figure 1-3 of Kim et al. operates. Nor has the Office shown that the device in Figure 1-3 of Kim et al. describes the second claimed limitation of an MRE that changes its resistance depending on the current flowing through a nearby current-carrying component.

For the above reasons, the Office has not substantiated that Kim et al. anticipate each and every limitation in the rejected claims. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 103

The Office has rejected claims 27-28 under 35 U.S.C. § 103(a) as being obvious over Kim et al. and Gallagher (U.S. Patent No. 5,640,343) for the reasons listed on pages 4-5 of the Office Action. Applicant respectfully traverses this rejection.

The Office recognizes that Kim et al. fail to describe using the MRAM device in an electronic apparatus. The Office argues that Gallagher discloses that MRAM devices can be used in computers. The Office therefore concludes that it would have been obvious to the skilled artisan to use the MRAM device described by Kim et al. in a computer because Gallagher teaches that MRAM devices are used in computers.

Assuming, *arguendo*, that the Office's proposed combination of these references would have been obvious to the skilled artisan (an assumption Applicant traverses for the record), the Office has not shown that the proposed combination suggests every limitation in the rejected claims. As noted above, the Office has not shown that Kim et al. teach a device containing a MRE that contains a first conductive layer connected to terminals via leads. Nor has the Office shown that Kim et al. described a device containing a MRE that changes its resistance depending on the current flowing through a nearby current-carrying component.

And the Office has not argued—or even alleged—that Gallagher describes either of these limitations. And since the Office has not shown that either reference describes such a limitation individually, it would be nearly impossible for the Office to substantiate that the combination of the references would suggest either of these limitations, let alone both of these limitations.

For the above reasons, the Office has not substantiated that the proposed combination of Kim et al. and Gallagher suggest every limitation in the rejected claims. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Allowable Claims

Applicant appreciates the indication that claims 2, 11, 29, and 30 contain allowable subject matter and would be allowed if re-written in independent form. Applicant has amended the claims as indicated above so that the limitations in some of these dependent claims would be present in some of the independent claims.

Allowed Claims

Applicant appreciates the indication that claims 14-18, 20-23, 25-26, and 32-34 are allowable over the prior art of record.

CONCLUSION

For the above reasons, as well as those of record, Applicant respectfully requests the Office to withdraw the pending grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Amendment, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 50-0843.

Respectfully Submitted,

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